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ABSTRACT

This report discusses the accomplishments and limitations of the Nine-Site Program Improvement initiative, a 3-year venture in which federal contractors provided technical assistance to schools. The contractors, Chapter 1 Technical Assistance Centers (TACs) and Rural Technical Assistance Centers (RTACs) received about $60,000 per year for their work with each site. Participating schools had programs funded by Chapter 1 that had been identified as needing improvement. Five sites were large urban districts in Baltimore, Maryland; Chicago, Illinois; Detroit, Michigan; Los Angeles, California; and Dade County, Florida. Three sites included relatively small, isolated rural schools in Pike County, Kentucky; southeastern Iowa; and the Mississippi Delta. Seven schools administered by the Bureau of Indian Affairs comprised the ninth site. The initiative offers lessons about ways of organizing and conducting technical assistance that goes directly to individual schools and that is sustained over a period of time. The assistance given by the TACs and RTACs was generally considered good. At five of the nine sites, efforts are being made to extend assistance another year. Overall, however, the impact of the technical assistance was limited by the lack of clear and well-articulated visions of how schools might be different. (Contains three references.) (SLD)

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ALTERNATIVES FOR FEDERALLY-SPONSORED TECHNICAL ASSISTANCE FOR SCHOOL IMPROVEMENT: LESSONS FROM CHAPTER 1 PROGRAM IMPROVEMENT

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Many federal education programs support technical assistance to state departments of education, school districts, and schools. This report discusses the accomplishments and limitations of a recent initiative in federally supported assistance to schools. The lessons of this initiative can be applied in two laws that are soon to be reauthorized, the Elementary and Secondary Education Act (ESEA) and the authorizing legislation for the Office of Educational Research and Improvement of the U.S. Department of Education (ED); both laws address the organization and operations of technical assistance.

The Nine-Site Program Improvement Initiative evaluated in this report was a three-year venture in which federal contractors provided technical assistance to schools. The contractors--Chapter 1 Technical Assistance Centers (TACs) and Rural Technical Assistance Centers (RTACs)--received about $60,000 per year for their work with each site, which included several schools. The participating schools had programs funded by Chapter 1 of ESEA that had been identified as needing improvement on the basis of inadequate gains in student performance. Five sites were large urban districts: Baltimore, Chicago, Detroit, Los Angeles, and Dade County, Florida. Three sites included relatively small, isolated rural schools: Pike County, Kentucky; a cluster of schools in southeastern Iowa; and nine schools in six districts in the Mississippi Delta. Seven schools administered by the Bureau of Indian Affairs (BIA) in the U.S. Department of Interior comprised the ninth site.

Findings

The Nine-Site Initiative offers lessons about ways of organizing and conducting technical assistance that goes directly to individual schools and that is sustained over a reasonably long period of time. On the positive side, this evaluation identified several accomplishments of the initiative:

- At the end of the third year of the initiative in all of the sites, there was evidence of increased understanding of Chapter 1 regulations and requirements, improvements in the quality and understanding of achievement test data, and increased understanding and experimentation with new instructional techniques.

- In several sites, participation in technical assistance activities appeared to contribute to increased collegiality and professional confidence among teachers.

- In two sites, technical assistance contributed to changes in district administration of Chapter 1.

- Overall, teachers, principals, and district and state administrators who were familiar with the assistance activities gave them high marks and felt that the TAC/RTACs responded to local problems and concerns. They also appreciated the materials the

TAC/RTACs provided, particularly information about programs and practices operating in other places around the country.

Nevertheless, despite these positive outcomes and the perceptions of participants, *a central finding of this evaluation is that the technical assistance had limited impact in these schools*. Reasons for the lack of significant impact include the following:

- Technical assistance was linked to an unpopular and incompletely understood federal mandate, with the result that it was difficult to initiate any activities and there was little interest in and commitment to them once they began.

- Technical assistance content and strategies were, for the most part, determined by the TAC/RTACs and local administrators with little or no input from teachers. The activities were primarily intended to convey information, but not necessarily to contribute to professional development or an informed critique of current programs and practices in individual schools.

- Technical assistance was not strongly linked to other reform initiatives, nor was it guided by local visions of how schools that serve disadvantaged students might be better.

- There was little support and encouragement for teachers to participate in the assistance activities or to work on related improvement tasks at other times.

The Nine-Site Initiative began under conditions that federal officials expected to be conducive to success. Several of the sites were already engaged in ambitious reforms (e.g., the changes in Chicago school governance, site-based management in Dade County, and the Kentucky Educational Reform Act). The mandate for Chapter 1 program improvement had been imposed on all the participating schools, bringing with it a requirement for school-level improvement plans. The TAC/RTACs were veteran providers of assistance on assessment and program improvement.

On the other hand, some circumstances surrounding the initiative were less auspicious. In an evaluation that tracked the early course of the initiative, we found enormous confusion about the duration of ED's support for the initiative and about the expectations for what was to be accomplished. The earlier evaluation also found that schools in many of the sites were coping with conditions of extreme disadvantage in their communities, which made it difficult to concentrate on change and improvement despite the overwhelming need. Ironically, the presence of other reform initiatives in some sites, instead of creating momentum that could help carry Chapter 1 program improvement, instead impeded start-up of the nine-site activities because state and local reform initiatives took precedence over Chapter 1 program improvement. All these circumstances combined to dampen the potential local commitment to the technical assistance activities.

This absence of commitment, combined with the fact that, in eight of the nine sites, participation was mandatory, meant that the TAC/RTACs had to spend considerable time selling the initiative and themselves to the schools. Furthermore, two sites, Los Angeles and Mississippi, were served by a TAC or RTAC that lost its contract after the first year. In each case, the new contractor had to repeat the work of building rapport.

Local Context and Technical Assistance Services

Through on-site interviews with teachers, principals, district administrators, and technical assistance providers, along with a review of detailed monthly reports from the TAC/RTACs, this evaluation examined the local contexts in the sites and the technical assistance services provided through the Nine-Site Initiative.

The Sites: Not Predisposed to Use Assistance

The nine sites participating in this initiative ran the gamut from immense urban districts to isolated rural settings; most of the schools had high levels of poverty among their students. Despite the mandate to improve their Chapter 1 programs, few schools embarked on this initiative with a drive for reform in Chapter 1--not the least because for many of them the clash of multiple reform initiatives was a continuing worry.

- The requirement for Chapter 1 program improvement did not, by itself, create fertile ground for assistance in any of the schools. Typically, teachers and principals were mildly resentful that their school had been identified for improvement and wanted the designation to go away.

- In the urban sites, large, complex bureaucracies, labor disputes, and impending budget shortfalls made it difficult for the TACs to get the attention of local administrators and school staffs.

- In the rural sites, by contrast, the relative absence of competing programs and pressing problems meant that the technical assistance activities received greater support.

Participation: Varying but Modest Intensity

Although the Nine-Site Initiative was considered a departure from previous federal assistance because it would provide intensive services to individual schools, local participants typically did not

experience the services as intensive. Initially, many schools were included, but in the third year, even with fewer schools engaged in the initiative, a typical school received only a few person-days of on-site help. Furthermore, these on-site days represent the assistance provider's time, not the individual recipients' time; under the varying local arrangements only a small proportion of participating teachers actually experienced more than a few hours of assistance or saw the assistance provider as often as monthly.

- During the first year of the Nine-Site Initiative, the total number of participating schools was 68, with the number of schools receiving services ranging from five to ten per site. The total number of participating schools declined by one-third by the beginning of the third year of the initiative.

- In the third year of the initiative, the mean amount of TAC/RTAC assistance to individual participating schools was 40 hours, with a median of 43 hours. The range was from 81 hours at a school in Baltimore down to 12 hours at a school in Chicago. In four sites, TAC/RTACs achieved some economies of scale by providing assistance to several schools in a central location.

- In three sites, TAC/RTACs provided assistance to each individual school every month of the year. In the other sites, individual schools did not receive on-site assistance every month; some schools received as few as two or three visits from TAC/RTAC staff during the year.

- In Baltimore, Iowa, and Los Angeles, technical assistance was targeted to clearly defined, small groups of school staff, who received relatively high levels of assistance. At other sites, teacher participation was more broadly distributed; as a result, more teachers participated in assistance activities, but individual teachers received very little assistance.

Content: Information Transmission

By and large, the nine-site assistance disseminated new information to participants. To a lesser extent, it trained them in applying new skills. It did little to help them tie the new information or skills into a broader vision of instructional improvement. Although the content of the technical assistance varied across sites and individual schools, the common denominators included a focus on instruction, Chapter 1 requirements, and assessment. In several sites, the content shifted and evolved over time; a clear, consistent focus was the exception rather than the rule.

- In all sites, the content of technical assistance usually included: (1) training in new instructional practices, especially "hot topics" like cooperative learning, whole language, and math manipulatives; (2) assistance with Chapter 1 program

administration and the interpretation and use of student test data; and (3) assistance or training related to local or state initiatives.

- The most ambitious TAC/RTAC efforts to introduce innovations in classroom instruction attempted to ground teachers in the research and rationales underlying whole language, literature-based language arts, or the teaching of problem solving and other advanced skills in mathematics. Frequently, assistance activities had the more limited goal of introducing information about discrete instructional practices that teachers could use immediately.

- In most sites, TAC/RTAC assistance attempted to strengthen school-level efforts to meet the requirements of state and local reforms; in several sites, TAC/RTAC assistance included a modest amount of help in developing and evaluating schoolwide projects.

Varying Strategies for Organizing and Delivering Technical Assistance

In the absence of specific direction about how to organize their services, the TAC/RTACs developed different ways of working with the sites. The approaches and their results varied greatly.

- Where TAC/RTAC activities involved groups of schools, they achieved some economies of scale, providing more contact hours to schools and teachers than visits to individual schools alone would allow. In other sites, TAC/RTACs pursued a strategy of intensive attention to a small number of teachers, working on classroom instruction through demonstration teaching and coaching.

- Technical assistance in Iowa, which involved teams of teachers and administrators from each school participating in a series of activities that were connected to a clear framework, reflected the most thoroughly developed strategy for organizing and providing technical assistance.

- In sites where one-on-one sessions were the dominant TAC/RTAC strategy, sessions tended to be discrete, isolated events with little relation to one another.

- In sites where a clear content focus and a well-defined strategy for delivering services guided the technical assistance process, the assistance was much more likely to be cumulative over the three years of the initiative. In sites without a clear focus, technical assistance tended to be tentative and reactive.

- We found a few examples of TAC/RTAC cooperation with other external assistance providers, but no extensive collaboration.

Conclusions and New Directions for Technical Assistance

Many federal and state technical assistance programs are organized to convey information about options for improving instruction or some other element of educational practice. Some technical assistance goes a step further to include a review of implementation strategies for using the information. In either case, the assistance providers are "experts" who transmit information and impart skills to their audiences.

Most educators and sponsors of assistance expect this approach. For them, good assistance effectively and efficiently conveys useful information and provides some guidance about how to use it in daily practice. Good assistance also does not disrupt the schedule--or, if it does, the trade-off is worthwhile because of the quality and usefulness of the content. Ineffective assistance, on the other hand, is assistance whose content is not useful for the target audience or assistance that seriously disrupts other important work.

The assistance provided under the Nine-Site Initiative was, within the narrow limits of this model, generally good assistance. The TACs and RTACs understood local demands for assistance and worked hard to meet them. One indicator of their success in meeting local demands is that in five of the nine sites, negotiations are under way or contracts have been signed to extend TAC/RTAC assistance into 1993-94. Our findings about the amount, content, organization, and outcomes of the assistance lead to several favorable conclusions:

- The technical assistance activities and services generally met teachers' and principals' standards for quality and were therefore considered effective.
- The TAC/RTACs provided the schools with a large amount of information and materials about instructional practices, curriculum, and student assessment.
- Many of the teachers who participated in the assistance activities reported that they had experimented with the new strategies in their classrooms and found that these strategies "worked"--they held students' attention, they relieved teachers' boredom, and they offered new entries for lesson plans.
- Follow-up visits, although usually limited in duration and frequency, gave teachers a chance to review progress and seek additional advice on how to use the information. Repeated visits over the three-year period, even though they were not always frequent or regular, conveyed the sense that the TAC/RTACs were committed to working with the schools and that they understood local needs and concerns. These long-term relationships helped set TAC/RTAC assistance apart from assistance that teachers and principals reject as not helpful.

- In several sites and schools, TAC/RTAC assistance extended the standard model in two additional ways. First, it was targeted to stable groups of teachers whose participation was sustained for a long period of time. Second, the assistance topics were cumulative--each individual activity was part of a framework that connected it to a broader vision.

In short, the assistance provided under the Nine-Site Initiative conformed to a generally accepted and reasonably popular model of assistance as the transfer of skills from experts to practitioners. This model is directly analogous to staff-development approaches that train the participants in specific skills. Although these models of technical assistance and professional development currently prevail as the most popular, they have serious shortcomings. There is widespread agreement within the education policy and research communities that a transfer of knowledge and skills is rarely sufficient to help schools improve in meaningful, lasting ways. Little (1993) makes a distinction between transferring specific skills and fundamentally reforming schools:

> To fit opportunities for professional development to a campaign for the principled redesign of schooling is arguably a different matter from organizing the training and support to implement a program or a set of readily transferable practices. (p. 132)

Little and others, notably Michael Fullan (1991, 1992), argue that fundamental school reform requires a transformation of the culture of schools and school systems. Teachers, principals, parents, and other members of the school community establish a new organizational culture conducive to initiating new practices and policies. Proponents of systemic reform go a step further to suggest that, if these local efforts are to have lasting significance, they must be encouraged and supported by leadership from the top. The leadership sets national standards and policy mandates to support their implementation.

These more recent perspectives on school change differ from the earlier perspectives in at least three important ways. All of them have implications for planning and implementing technical assistance programs. At present, most technical assistance is organized around several assumptions:

- The skills-transfer model defines the focus of technical assistance as isolated problems or issues in school practice, with solutions delivered by the technical assistance provider.
- Because the solutions are brought in from the outside, school staff are seen as essentially passive receptors of the new ideas and practices.

- The impetus for change also comes from outside, with the result that the external assister assumes a central leadership role in the process. As a result, the process often collapses when the assistance ends.

In Little's terms, this approach represents the "dominance of training over problem solving" (p. 143). The more recent cultural views of change stress the importance of school-based initiative and leadership, often supported and encouraged by policy mandates from the top. These perspectives on change include an expanded and redefined role for technical assistance. However, this perspective places the school itself at the center of initiating and directing the change process, while the technical assistance provider moves away from the center of decisionmaking and authority.

In our view, critics of conventional staff development and technical assistance have identified a crucial flaw in these approaches, one that inevitably limits their effectiveness. The Nine-Site Initiative, despite some real contributions, had a limited impact on participating schools specifically because the assistance conformed to the standard models of external assistance and school change. It was designed to support training and the transfer of information and skills, not problem solving. If the intent of the initiative was to generate serious attempts at Chapter 1 (or broader) improvement, then the traditional model of technical assistance was not a good choice.

Hindsight is easy. At the time that the Nine-Site Initiative unfolded, there were several reasons why the TACs and RTACs were unlikely to pursue an alternative model of assistance. First, the recent history of government-sponsored technical assistance led teachers and principals to expect a certain type of service, most likely one that revolves around a set menu of options for workshops and presentations related to specific instructional techniques and how to install them into daily lesson plans (Fullan, 1991). They had been trained to appreciate and use this kind of assistance, and they had no incentives to question it. In addition, the fact that the initial technical assistance services generally followed a pattern--needs assessment, planning, and workshops--that very much resembled other school improvement programs and external assistance led principals and teachers to think about them in much the same way that they thought about these other activities.

Further, given the link between the assistance and Chapter 1 program improvement, schools were unlikely to think much at all about what kind of help they needed. The general failure or unwillingness of most schools and districts to view Chapter 1 program improvement as much more than a bureaucratic event initially led them to be skeptical, or worse, about the possible contributions of the Nine-Site Initiative, even in schools where serious schoolwide reform efforts were under way.

The expectations of the participating schools were most conducive to conventional technical assistance. Moreover, the structure of the Nine-Site Initiative, its fairly hasty start-up, and the confusion regarding ED's goals in establishing the initiative gave the TAC/RTACs little reason--or opportunity--to rethink their traditional approach to technical assistance. Originally established to help state and district Chapter 1 administrators meet federal evaluation requirements, the TAC/RTACs have spent years developing suitable methods for working with large groups of people to transmit information about specific, limited tasks, with support and encouragement from ED. In the case of the Nine-Site Initiative, ED's strong suggestion that the Nine-Site Initiative begin with the TAC/RTACs cleaning up Chapter 1 test data to be sure that schools had been properly designated for program improvement, together with a sometimes uphill battle to establish themselves as credible sources of assistance, led the TAC/RTACS to stick with familiar strategies and topics and shy away from consideration of alternatives.

In some ways, by the TAC/RTACs' own admission in many cases, the Nine-Site Initiative has been as much a learning experience for the participating TAC/RTACs as it has for the schools they have assisted. At the outset of the initiative, they had precious little time to plan a brand-new and much more complicated technical assistance process while trying to understand local context and create niches for themselves in complex and troubled schools; in addition, they were still responsible for carrying on their other work. Hence, they chose the rational and reasonable course of following the technical assistance model of the day--their clients (ED) implicitly demanded it and their target audiences (schools) expected and happily received it. To expect something different, given the circumstances, would have been somewhat wishful.

If ED's goal in sponsoring the Nine-Site Initiative was to identify effective strategies for school-level technical assistance to improve Chapter 1 programs, much can be learned from the initiative. Assistance activities in Iowa, Baltimore, and Los Angeles illustrate how relatively small amounts of funds can be used to provide assistance over a long period of time that is considerably more intensive than most government-sponsored assistance. These sites offer examples of assistance that targets groups of teachers and is planned and implemented in a cumulative and iterative manner. Services in several sites, most notably Kentucky, show the value of linking technical assistance for Chapter 1 to other state and local reform initiatives geared toward schoolwide reform. Activities for clusters of schools in Mississippi and Iowa are examples of how economies of scale can be achieved while maintaining the personalized nature of assistance. Assistance in all of the sites demonstrates the value of at least some follow-up visits and the importance of establishing long-term relationships between external assisters and the target audiences.

On the other hand, the very fact of linking the assistance to a categorical program's mandate placed serious constraints on its reach and ultimate effects. Early experience in all of the sites demonstrates the problems of initiating mandatory assistance that is linked to compliance with the requirements of categorical programs. Administrators and teachers in all of the schools had little understanding of Chapter 1 program improvement at the time the Nine-Site Initiative began. For most of them, it represented a set of bureaucratic requirements that did little to inspire serious thinking about opportunities and directions for change. As we learned, the goal was to "get out of program improvement." Some schools did test out during the second or third year of the initiative. A few schools that demonstrated gains did not sustain them and were identified for program improvement a second time. Other schools remained in program improvement status at the end of the third year. We did not find any clear evidence to suggest that the changes in program improvement status were linked to anything that the schools or the TAC/RTACs did in the way of program improvement.

Another way of stating this conclusion is that the organization, content, and, ultimately, the impact of the technical assistance were limited by the lack of clear and well-articulated visions of how the schools might be different. Although the Chapter 1 requirement for program improvement plans was intended to stimulate such visions, in fact the school plans did not reflect careful thought about curriculum, instruction, assessment, or staff development, nor did the plans appear to have emerged from extensive participation and deliberation by teachers and other members of the school staffs. In the absence of such visions or any incentives to develop them, teachers searching for new techniques and tricks welcomed and valued technical assistance that offered information about innovations in instruction, curriculum, and student assessment, and in some cases facilitated experiments with them. Similarly, assistance that helped administrators understand Chapter 1 regulations and student test data was useful. But its effects were modest; there were few noticeable changes in professional collegiality or schools' capacities to change or to be self-reflective.

If ED's goal in sponsoring school-level technical assistance is to contribute to the fundamental redesign of education for disadvantaged students, the lessons from the Nine-Site Initiative are not the lessons of a success story. They suggest several possible new directions for ED to consider in designing future technical assistance efforts.

1. Through competitive procurements and reporting requirements, give assistance providers incentives to go beyond conveying information about successful practice, and foster professional development of teachers.

Federal support for all the providers of technical assistance should reflect clear expectations about the purposes of the assistance. By the same token, because assistance that nurtures self-reflection and critical thinking is largely uncharted territory--few providers and probably fewer federal officials know how to do it--the government should avoid excessive prescription about the content and methods of assistance. ED could encourage or require potential contractors to propose alternative models of technical assistance and explain why the models are appropriate for intended target audiences. In addition, potential contractors could be encouraged or required to provide evidence that potential target audiences are disposed to use the alternative forms of assistance. Indeed an important task in providing new kinds of technical assistance will be to help recipients develop the capacity to use it.

The importance of these expectations could be underscored with new and different reporting requirements. ED could reduce or eliminate the current emphasis on aggregated totals (e.g., total number of people served, workshops, or telephone requests) and replace it with a system that includes information about implementing the new models, the difficulties encountered, and the extent to which these problems were overcome. A revised reporting system also would require contractors to provide the quantitative information necessary to support observations and assertions about implementation and effectiveness. The month-by-month reports that we used to collect information on services in the third year of the Nine-Site Initiative are examples, albeit very simple ones, of reports that permit easy analysis of assistance patterns and diagnosis of problems or gaps.

2. Create a technical assistance network that connects to and leverages state and local support for professional development.

In observing that a different model of technical assistance could have done much more to foster school improvement, we are drawing on the recent literature on professional development and its potential contribution to reform. Technical assistance in support of school problem solving must go hand-in-hand with more ambitious and unconventional forms of professional development.

In fact, even conventional forms of technical assistance demonstrate the necessity of a connection with local professional development. Even when assistance is available to the target audience at "no cost" for the services, there are costs associated with participation. These may include paying substitutes to cover classes, paying stipends for participation during non-school time, or simply ensuring that normal allotments of staff development time are allocated to the assistance

activities. The size of these commitments grows rapidly as they include opportunities for teachers and others to continue working together between visits by external assisters. Without such commitments, the contribution of technical assistance is seriously impaired.

3. Create an assistance network organized primarily around themes or topics, rather than categorical programs, and include both process and content specialists.

The experience of the Nine-Site Initiative demonstrated the problems that external assisters face when their assistance is linked to a program that is not central to local improvement efforts. A more compelling foundation for an assistance network would be to foster ambitious reform in the name of a broader goal--such as bringing all students to high levels of academic performance.

By offering assistance from specialists in both process and content, policymakers would recognize that both are needed. The initial process tasks in school change include much more extensive attention to identifying local needs and creating a vision that will guide efforts to address them. Process specialists would initially help schools build norms of collegiality and cooperation and define goals, problems, and improvement tasks. Content specialists would then be available, at the request of schools and districts, to help solve the problems and carry out the tasks.

In making decisions about funding, it would be necessary to balance support for those schools most in need with support for those schools that are ready to change. Schools that are not ready for change will require more of the early capacity-building services and represent greater risk of a low return on the investment than schools in which the norms of collegiality and cooperation already exist.

4. Integrate new technologies into the technical assistance network.

Recent advances in computer hardware and software offer a range of possibilities for exercising this alternative. For example, it would be relatively easy to include large amounts of printed text in on-line systems that are in place in many school districts. Video packages containing workshop sessions and demonstrations are also increasingly available at relatively low cost. More sophisticated interactive technologies have also shown great potential in a small number of experimental programs.

Nevertheless, the experiences of the Nine-Site Initiative suggest caution in using these new technologies. First, none of the schools we visited have the facilities to take advantage of much more than a routine electronic dissemination system, and even those facilities are available in limited numbers. Second, even when the facilities are available, we saw little evidence that they are used.

An exception is the dissemination of information about KERA mandates and their implementation over a statewide educational television network: all of the Kentucky Schools receive these broadcasts via satellite transmission. Third, given the extent to which teachers valued the interpersonal dimensions of their relationships with TAC/RTAC staff, it is unlikely that they would avail themselves of the electronic dissemination services in the first place. Overall, even though the promises of this alternative are great, there is also the very real risk that the schools that need the assistance most are least likely to benefit from this element of the network.

*5. **Support capacity-building for the providers of technical assistance.***

A central theme in these alternatives is that future technical assistance programs will provide services very different from those now being provided. Facilitating changes in the culture of schools will, for example, require assisters to establish long-term relationships and pay sustained attention to local issues and concerns. More specialized help in studying, implementing, and assessing recent innovations in instruction, content, and assessment require sophisticated understanding of the underlying theories as well as detailed knowledge of practice. Both sets of responsibilities, along with others that will almost certainly emerge, also demand understanding of and the ability to apply principles of sound consulting and effective adult education.

As we saw in the Nine-Site Initiative, a shift in focus to school-level assistance combined with the need to establish and maintain long-term relationships with schools and districts were learning experiences for the TAC/RTACs. The alternative assistance strategies discussed here represent even greater changes in perspective and practice. Therefore, we expect that there will be a need for training and staff development opportunities to prepare technical assistance providers to carry out their new responsibilities. The on-line information systems being developed and used by the TAC/RTACs are but one example of internal capacity building. Networking activities among the ten Eisenhower National Regional Consortia for Mathematics and Science Education are a second example. More focused in-house staff development activities, including training and staff seminars, are a third possibility. We do not propose massive new investments in the professional development of assistance providers, but an exclusive reliance on "learning by doing," with no built-in opportunities for reflection, is a formula for mediocrity.

In conclusion, it is certainly fair to say that the Nine-Site Initiative affected a significant number of teachers, principals, district administrators, and technical assistance providers by involving them in some conventional ways of working on issues related to improving education for disadvantaged students. However, our evidence indicates that for most of these participants, the impact was not very deep and the effects of the initiative will probably not last long. Thus, the

challenge for future technical assistance programs is not to figure out ways to make the traditional approaches more effective. Instead the challenge is to create and support technical assistance programs that recognize and address the complexity of school change as a cultural process and the professional needs and capabilities of educators.

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